

What is claimed is:

1. A method of fabricating a semiconductor device comprising:
 - providing a semiconductor wafer having a first surface and a second surface opposite of the first surface, the first surface having a plurality of circuit elements each of which is defined by scribe lines formed in the semiconductor wafer;
 - forming a sealing resin on the first surface of the semiconductor wafer;
 - forming a plurality of external terminals on the first surface of the semiconductor wafer, wherein the external terminals respectively electrically connect to the circuit elements and project from the sealing resin;
 - forming a heat spreading material on the second surface of the semiconductor wafer; and
 - separating the semiconductor wafer at the scribe lines after the heat spreading material is formed on the second surface of the semiconductor wafer.
2. The method according to the claim 1, further comprising polishing the second surface of the semiconductor wafer before said forming the heat spreading material.
3. The method according to the claim 1, further comprising forming a heat conductor on the second surface of the semiconductor wafer, before said forming the heat spreading material.
4. The method according to the claim 1, wherein said separating includes removing the heat spreading material from the scribe lines and then cutting the semiconductor wafer.
5. The method according to the claim 4, wherein the heat spreading material on the scribe lines is removed using a first blade, and the semiconductor wafer is cut using a

second blade, wherein a speed of rotation of the first blade is slower than a speed of rotation of the second blade, a width of the first blade is wider than a width of the second blade, and a density of diamonds embedded in the first blade is higher than a density of diamonds embedded in the second blade.

6. A method of fabricating a semiconductor device comprising:

providing a semiconductor wafer having a first surface and a second surface opposite of the first surface, the first surface having a plurality of circuit elements each of which is defined by scribe lines formed in the semiconductor wafer;

forming a sealing resin on the first surface of the semiconductor wafer;

forming a plurality of external terminals on the first surface of the semiconductor wafer, wherein the external terminals respectively electrically connect to the circuit elements and project from the sealing resin;

selectively forming a heat spreading material on the second surface of the semiconductor wafer, wherein the scribe lines are exposed from the heat spreading material; and

separating the semiconductor wafer at the scribe lines after the heat spreading material is formed on the second surface of the semiconductor wafer.

7. The method according to the claim 6, wherein said selectively forming the heat spreading material includes forming a first mask that covers the scribe lines, and then forming the heat spreading material on the second surface using the first mask.

8. The method according to the claim 7, wherein the first mask is removed after forming the heat spreading material.

9. The method according to the claim 8, further comprising forming a second mask

on the scribe line after forming the first mask, wherein the second mask is removed before removing the first mask.

10. The method according to claim the 9, wherein the first mask is a photoresist material and the second mask is a metal mask.

11. The method according to the claim 8, further comprising forming a second mask on the peripheral area of the semiconductor wafer after forming the first mask, wherein the second mask is removed before removing the first mask.

12. The method according to the claim 11, wherein the first mask is a photoresist material and the second mask is a metal mask.

13. A method of fabricating a semiconductor device comprising:

- providing a semiconductor wafer having a first surface and a second surface opposite of the first surface, the first surface having a plurality of circuit elements each of which is defined by scribe lines formed in the semiconductor wafer;
- forming a sealing resin on the first surface of the semiconductor wafer;
- forming a plurality of external terminals on the first surface of the semiconductor wafer, wherein the external terminals respectively electrically connect to the circuit elements and project from the sealing resin;
- forming a first mask on the scribe lines of the second surface;
- dipping the semiconductor wafer into a liquid heat spreading material, wherein the second surface of the semiconductor substrate except for the scribe lines is coated by the liquid heat spreading material; and
- separating the semiconductor wafer at the scribe lines after the liquid heat spreading material is formed on the second surface of the semiconductor wafer.

14. The method according to the claim 13, further comprising removing the first mask after taking the semiconductor wafer out from the liquid heat spreading material.

15. The method according to the claim 13, wherein the first mask is a water repellent mask.

16. A method of fabricating a semiconductor device comprising:

providing a semiconductor wafer having a first surface and a second surface opposite of the first surface, the first surface having a plurality of circuit elements each of which is defined by scribe lines formed in the semiconductor wafer;

forming a sealing resin on the first surface of the semiconductor wafer;

forming a plurality of external terminals on the first surface of the semiconductor wafer, the external terminals respectively electrically connect to the circuit elements and project from the sealing resin;

adhering the first surface of the semiconductor wafer to a supporter;

separating the semiconductor wafer at the scribe lines, to divide the semiconductor wafer into a plurality of chips; and

spraying a heat spreading material on the chips, to coat the second surfaces and side surfaces of the chips with the heat spreading material.

17. The method according to claim 15, wherein the supporter is an adhesive tape.

18. The method according to claim 17, wherein said separating comprises:

cutting the semiconductor wafer at the scribe lines using a blade to provide semiconductor elements; and

stretching the adhesive tape to separate the semiconductor elements away from

each other.